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Substitute Specification

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substantially flat side of the strand with the strand axial orientation aligning member as the strand is drawn past the fluid or liquid dispensing device. In FIG. 5, the strand is oriented so that the major axis of the cross-sectional dimension of the strand is substantially parallel to the direction in which a vacillating adhesive filament 520 is dispensed from a dispensing device 530 by a similarly aligned strand axial orientation aligning member, which is not visible in FIG. 5. The strand orientation illustrated in FIG. 5 is desirable in some strand coating applications, for example, those where the strand is coated with a vacillating filament of fiber as illustrated in FIG. 5 to ensure that the strand is coated on both sides 512 and 514 along the major dimension or axis. In other embodiments, the strand may be oriented at different angles by orientating the angle of the guiding surface of the strand axial orientation aligning member. For example, the major dimension of the strand cross-section may be made substantially transverse to the direction of the adhesive flow with a transversely disposed strand axial orientation aligning member. In another embodiment, the strand may be oriented at other angles.

[0026] In FIG. 1, where the major dimension of the rectangular strand 110 is aligned transversely to the path of the filament 120, the strand tends to be coated on only one side thereof. The filament in FIG. 1 may be a substantially planar vacillating filament or a helical filament. Also, in many strand coating applications, the strand tends to twist back and forth about its axial dimension as it is drawn past the adhesive dispensing device, for example, where the strand is subject to vibration. If the twisting strand is symmetrical about its axial dimension the twisting thereof may not have an adverse affect on the application of adhesive onto the strand. However, in

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applications where the twisting strand has a rectangular cross-section, the twisting strand tends to be coated on only one side thereof facing the orifice when the major dimension of the strand is transverse to the path of the adhesive filament. Thus a twisting strand having a rectangular cross-sectional dimension will not be uniformly coated with adhesive along its axial dimension.

[0027] While not an issue for some applications, partial or incomplete applications of adhesive along the axial dimension of the strand is problematic for others. FIG. 6 illustrates an application where an adhesive coated strand 610 is bonded between first and second substrates 620 and 630, for example, in the manufacture of personal hygienic articles. Thus in applications like those illustrated in FIG. 6, it is desirable to uniformly coat the strand on both sides 612 and 614 along its major axis to ensure complete bonding along the axial dimension of the strand. Orienting the strand as illustrated in FIG. 5, with a strand axial orientation aligning member will ensure uniform coating of the strand on opposite sides of the major dimension along the axial dimension of the strand.

[0028] In the exemplary embodiment, a tangential force is applied to the strand as the strand is drawn over the strand axial orientation aligning member by guiding the strand in a groove of the strand guide roller that is not aligned with the adhesive dispensing orifice, as illustrated best in FIG. 4. Particularly, one of the grooves 232 or 234 of the strand guide roller guides the strand along a path that is misaligned with the orifices 212 and 214 of the adhesive dispensing device. A corresponding one of the strand axial orientation aligning members 250 or 252 changes the direction of the strand

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233 and 235 in alignment with the orifices 212 and 214. The tangential force biases the strand against the strand axial orientation aligning member as the strand is drawn past the adhesive dispensing device. The biasing force enables the strand axial orientation aligning member to maintain the desired orientation of the strand about its axial dimension at least in a neighborhood of the adhesive dispensing device. In an alternative embodiment, not illustrated, the strand may be captured between two strand axial orientation aligning members. In the alternative embodiment, it may be unnecessary to tangentially bias the strand about the strand axial orientation aligning member with a misaligned strand guide.

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